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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
09/059,865	04/14/98	IYER	R

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EXAMINER	
NGUYEN, T	
ART UNIT	**PAPER NUMBER**
2813	12

DATE MAILED: 10/08/99

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.	Applicant(s)
09/059,865	Ravi
Examiner	**Group Art Unit**
Thanh Nguyen	2813

☒ Responsive to communication(s) filed on *Sep 13, 1999*.

☐ This action is **FINAL**.

☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire *3* month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claims

☒ Claim(s) *12-23* is/are pending in the application.

Of the above, claim(s) *none* is/are withdrawn from consideration.

☐ Claim(s) _____ is/are allowed.

☒ Claim(s) *12-23* is/are rejected.

☐ Claim(s) _____ is/are objected to.

☐ Claims _____ are subject to restriction or election requirement.

Application Papers

☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on _____ is ☐approved ☐disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been

☐ received.

☐ received in Application No. (Series Code/Serial Number) _____.

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____.

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

☒ Notice of References Cited, PTO-892

☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). _____

☐ Interview Summary, PTO-413

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

DETAILED ACTION

In view of the response filed on the paper no. 11, the rejection indicated in paper no. 7 o the last office action is withdrawn.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 18-23 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The limitation "undesirable residual" in claim 18 contains subject matter which was not described in the original specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor. It is suggested to delete "undesirable".

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 12-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kim (U.S.Patent No. 5,466,637) in view of Matsuoka et al. (U.S. Patent No. 5,391,508).

Kim teaches a method of manufacturing an integrated circuit comprising the steps of: forming features on a substrate, the features protruding from the substrate to create creases adjacent the features (12, 13, 14), depositing a layer of non-dielectric material (stringer) (18, silicon) over the features and the creases, removing a portion of the non-dielectric material from the creases using a given method, leaving undesirable residual non-dielectric material in some of the creases, and converting the undesirable residual non-dielectric material in the creases into a dielectric material (22, oxide) (see figures 1-2, col.2, lines 50-68).

However, the reference does not teach removing a portion of the non-dielectric material, and nitridizing the non-dielectric material.

It is well-known in the art to form a non-dielectric material (silicon) over the protruding on substrate.

Therefore, it would have been obvious to one of ordinary skill in the requisite art at the time of the invention was made to remove a portion of the non-dielectric material to left the undesirable residual because the technique is well-known in the art.

Matsuoka et al teaches that silicon nitride side walls may be used, rather than silicon oxide (see column 16, lines 10-15).

Therefore, it would have been obvious to one of ordinary skill in the requisite art at the time of the invention was made to provide silicon nitride sidewall, in place of oxide sidewalls, in the Kim process, as taught by Matsuoka et al because it is shown that it is known in the art that silicon nitride function effectively as a sidewall and because silicon nitride is a better diffusion barrier and etch stop than silicon oxide and would therefore better protect the gate electrode.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 12-23 are rejected under the judicially created doctrine of double patenting over claims 1-22 of U. S. Patent No. 5,872,052 (patent # 08/599,675) since the claims, if allowed, would improperly extend the "right to exclude" already granted in the patent.

The subject matter claimed in the instant application is fully disclosed in the patent and is covered by the patent since the patent and the application are claiming common subject

matter, as follows: a method of manufacturing an integrated circuit, depositing a layer of non-dielectric material (silicon) over the substrate and remove the substrate leaving the resdidual non-dielectric material, converting the non-dielectric residual material into dielectric material. Furthermore, there is no apparent reason why applicant was prevented from presenting claims corresponding to those of the instant application during prosecution of the application which matured into a patent. See *In re Schneller*, 397 F.2d 350, 158 USPQ 210 (CCPA 1968). See also MPEP § 804.

Response to Arguments

Applicant's arguments filed 12/14/98 have been fully considered but they are not persuasive. Applicant contends that none of the reference teaches the stringers (spacers 18) are the undesirable residual. In response to applicant, the limitation "undesirable residual"contains subject matter which was not described in the original specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor. The non dielectric residual remaining after etching step is conductive stringers (spacers, 18). Therefore it would have been obvious to the artisan to form oxide by oxidizing the stringers (spacers, 18).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thanh Nguyen whose telephone number is (703) 308-9439. The examiner can normally be reached on Monday-Thursday from 7:30AM to 5:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Charles Bowers, can be reached on (703) 308-2417. The fax phone number for this Group is (703) 308-7722.

Thanh Nguyen

October 6, 1999

Charles Bowers
Supervisory Patent Examiner
Technology Center 2800